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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,221	09/28/2001	Thomas S. Laubner	17656	5888

7590 07/08/2002

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EXAMINER

WIMER, MICHAEL C

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 07/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/966,221

Applicant(s)

LAUBNER ET AL.

Examiner

Michael C. Wimer

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. Claims 2-7, 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, it is considered inaccurate, indefinite and confusing because a "second ground plane" is formed between the dielectric substrate and the first ground plane. Claim 1 recites that the patch is disposed on the substrate, which is disposed on the ground plane. All embodiments show the patch, dielectric and ground plane integrally layered on top of each other in that order. The second ground plane can only be the ground plane 10 in Fig. 2B and not the ground plane 24 because the antenna is designed around the ground plane directly beneath the patch and its supporting dielectric substrate.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 8, 15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Niehenke (5201065).

Regarding Claims 1, 8, 15 and 18, Niehenke shows in Figures 2 and 5, a microstrip antenna 100 and a method of providing therefor, comprising a first

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conductive ground plane 130, a dielectric substrate 102 disposed on the ground plane 130, a patch 114 disposed on the dielectric substrate 102, a feed means 116 for electrically feeding the patch, and a dielectric lens 142 for encapsulating at least a portion of the patch (top portion) to increase radiation gain at low angles, all arranged as claimed.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-7, 9-14, 16, 17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niehenke in view of Nichols et al (5691726).

Niehenke is discussed above. Regarding Claims 2-7, 9-14, 16, 17 and 19-23, Nichols shows in Figure 5, for example, a second ground plane 122 or 36 between the ground plane 122 and patch 34, and a space is created between the ground planes for providing additional elements therein. An additional antenna element, monopole 126 is shown disposed through the patch 34. It would have been obvious to the skilled artisan to employ the antenna arrangement of Nichols in lieu of that in Niehenke for the purpose of providing multi-band operation.

Niehenke also shows the lens 142 as a dome and an air gap between the lens and patch. Nichols also shows the dielectric cap 120 surrounding the monopole

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126 and a feed pin 38 is shown to be obvious in lieu of a corporate feed network or strip line feeder.

6. The following patents are cited as of interest showing similar antenna features as those claimed:

Openlander (6157348) specifically teaches the use of a dielectric prism (i.e., lens) 64 (Fig. 4 or 124 in Fig. 7) for lowering the radiation angle of a patch antenna in a mobile antenna system.

Chow et al (4872019), Grinberg (5929819) and Brown et al (6246369) all teach and suggest a dielectric lens used with a microstrip patch array.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (703) 305-3555. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K. Wong can be reached on (703) 308-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.



Michael C. Wimer  
Primary Examiner  
Art Unit 2821

MCW/June 29, 2002